

distributed for selected segments/links on primary regional routes and modes of access to stations and airports by adding No-Project volumes obtained from 2020 forecasts (from regional and local agencies), and 2020 travel demand generated by alternatives, to the key accessing facilities (roadways, transit links). This distribution was done at a screenline level for transit trips to reduce the subjectivity of assigning trips to specific facilities, but traffic assignments were made to specific freeways and arterials.

Summary tables for the region were then completed that identify impacts on highways/roadways (at screenline), public transportation services, goods movement, and parking facilities. The impacts in the summary table are described and ranked by level of service and as 'high', 'medium', or 'low' according to the potential extent of change to transit, circulation, and parking.

1.1 ALTERNATIVES (NO-PROJECT, MODAL, HST)

1.1.1. No-Project Alternative

The No-Project Alternative serves as the baseline for the comparison of Modal and High-Speed Train alternatives (Figure 1). The No-Project Alternative represents the state's transportation system (highway, air, and conventional rail) as it existed in 1999-2000 and as it would be after implementation of programs or projects currently programmed for implementation and projects that are expected to be funded by 2020. The No-Project Alternative addresses the geographic area serving the same intercity travel market as the proposed high-speed train (generally from Sacramento and the San Francisco Bay Area, through the Central Valley, to Los Angeles and San Diego). The No-Project Alternative satisfies the statutory requirements under CEQA and NEPA for an alternative that does not include any new action or project beyond what is already committed.

The No-Project Alternative defines the existing and future statewide intercity transportation system based on programmed and funded (already in funded programs/financially constrained plans) improvements to the intercity transportation system through 2020, according to the following sources of information:

- State Transportation Improvement Program (STIP)
- Regional Transportation Plans (RTPs) for all modes of travel
- Airport plans
- Intercity passenger rail plans (California Rail Plan 2001-2010, Amtrak Five- and Twenty-year Plans)

Recent history and the uncertainties of transportation financing in California point to a reality that many of the improvements identified in those plans will not be implemented, even by 2020. That notwithstanding, the No-Project Alternative is the best projection that can be made of year 2020 conditions, based on current local and regional planning policy.

As with all of the alternatives, the No-Project Alternative will be assessed against the purpose and need topics/objectives for congestion, safety, air pollution, reliability, and travel times.

1.1.2. Modal Alternative

There are currently only three main options for intercity travel between the major urban areas of San Diego, Los Angeles, the Central Valley, San José, Oakland/San Francisco, and Sacramento: vehicles on the interstate highway system and state highways, commercial airlines serving airports between San Diego and Sacramento and the Bay Area, and conventional passenger trains (Amtrak) on freight and/or commuter rail tracks. The Modal/System Alternative consists of expansion of highways, airports, and intercity and commuter rail systems serving the markets identified for the High-Speed Train Alternative.

(Figure 2 and Figure 3) The Modal Alternative uses the same inter-city travel demand (not capacity) assumed under the high-end sensitivity analysis completed for the high-speed train ridership in 2020. This same travel demand is assigned to the highways and airports and passenger rail described under the No-Project Alternative, and the additional improvements or expansion of facilities is assumed to meet the demand, regardless of funding potential and without high-speed train service as part of the system.

The Modal Alternative for the Bay Area-to-Merced region consists of two major sets of proposed improvements (see Figures 2 and 3):

- **Improvements to Highways:** Consisting of additional highway lanes to provide sufficient highway capacity and associated interchange reconfiguration, crossing bridge widening, ramp widening, cross street and intersection widening (Figure 2). Within the region, these improvements, therefore, would occur along proposed portions of Interstate (I) 5, I-880, I-580, I-80, and State Route (SR) 152. Table 1 lists the proposed highway improvements in the Bay Area-to-Merced region.
- **Improvements to Airports:** Primarily consisting of improvements to terminal gates and runways to provide sufficient landside and airside capacity and associated taxiways, ground access, parking, terminal and support facilities and airports that can serve the same geographic area and demand as the proposed High-Speed Train (HST) Alternative. Within the study area corridor, these proposed improvements would occur at San José International Airport and Oakland International Airport (Figure 3). Table 2 lists the airport improvements associated with the airports.

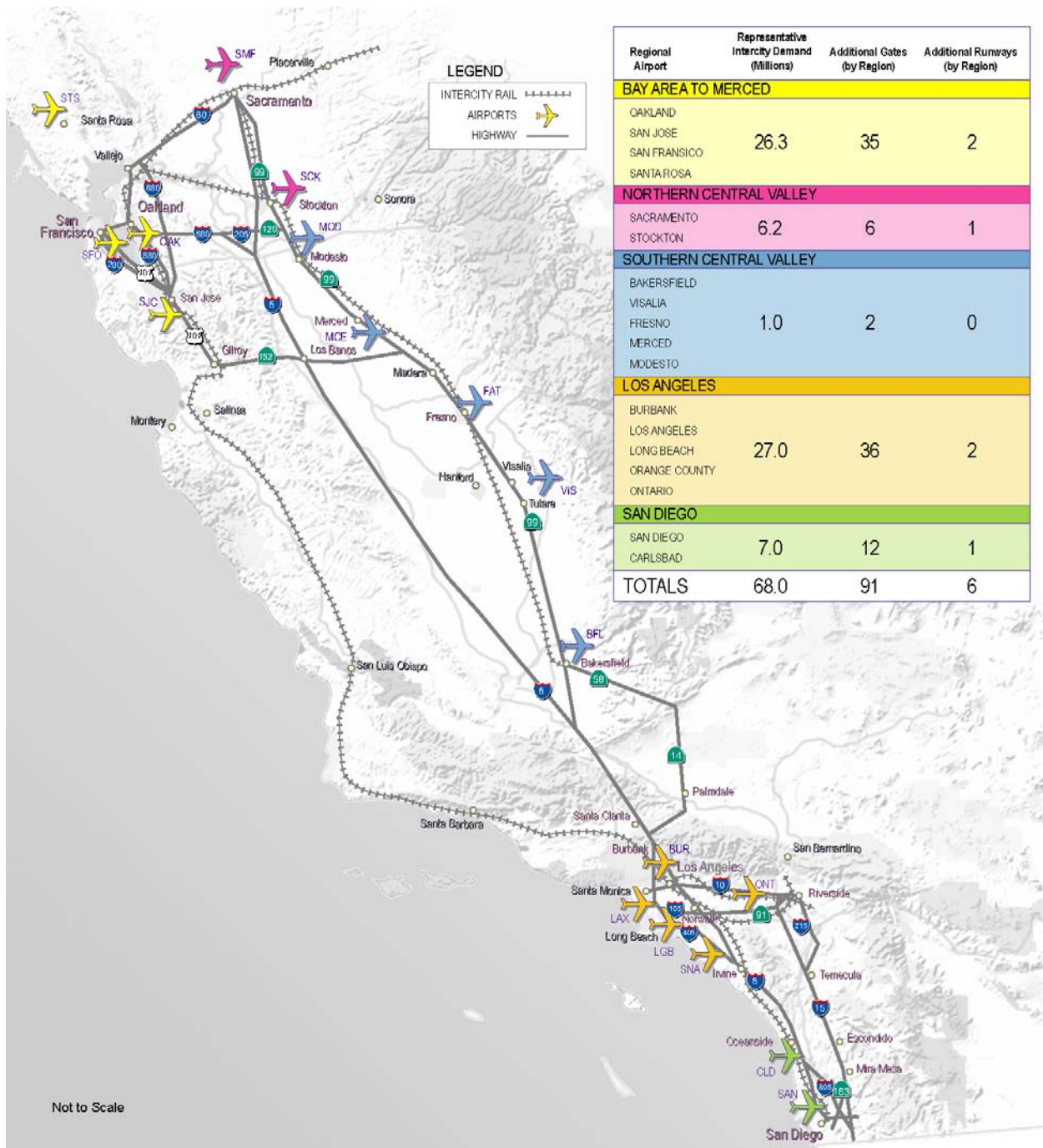
Figure 1
No-Project Alternative - California Transportation System



Figure 2
Modal Alternative - Highway Component



Figure 3
Modal Alternative - Aviation Component



**Table 1: Proposed Modal Alternative Highway Improvements
Bay Area to Merced**

Highway Corridor	Segment (From – To)	No. of Additional Lanes ¹ (Total – Both Directions)	No. of Existing Lanes (Total - Both Directions)	Type of Improvement
Segment 1: Merced to San José				
SR 152	SR 99 to I-5	2	1-2	widening
SR 152	I-5 to US 101	2	1-2	widening
US 101	SR 152 to Gilroy	2	2-3	widening
US 101	Gilroy to I-880	2	4-5	widening
Segment 2: San José to San Francisco				
US 101	I-880 to Redwood City	2	4-5	widening
US 101	Redwood City to SFO	2	4-5	widening
US 101	San Francisco International Airport (SFO) to San Francisco	2	4-6	widening
Segment 3: San José to Oakland				
I-880	US 101 to Fremont/Newark	2	3-4	widening
I-880	Fremont/Newark to I-238	2	3-4	widening
I-880	I-238 to I-80	2	2-4	widening
Segment 4: I-580 to I-5 (via I-238)				
I-580	I-880 to I-5 (via I-238)	2	4-6	widening
Segment 5: San Francisco to Sacramento				
I-80	San Francisco to I-880	0	5	None ²
I-80	I-880 to I-5 (Sacramento)	2	4-6	Widening
¹ Represents the number of through lanes in addition to the total number of existing lanes that approximate an equivalent level of capacity to serve the representative demand. ² No additional or separate facility assumed. Additional demand is assumed to utilize the existing bridge, spreading the peak period congestion. Source: Parsons Brinckerhoff, November 2002				

**Table 2: Proposed Modal Alternative Airport Improvements – Year 2020
Bay Area to Merced**

Airport Name	Additional Gates	Additional Runways
San José International Airport	14	one
Oakland International Airport	19	one
Source: Parsons Brinckerhoff, November 2002		

Note that with the exception of a small component of induced demand, the travel demand under the Modal Alternative is the same as for the No-Project Alternative, by virtue of the MTC travel model's comprehensive forecasts for the San Francisco Bay Area. Thus the Modal Alternative really consists of the No-Project Alternative's airport and highway facilities plus additional capacity adequate to accommodate the equivalent travel demand that would be carried by train under the High-Speed Train Alternative.

The Modal Alternative adds capacity in discrete amounts to roadways and airports throughout the state. With the implementation of such an alternative, the traveling public is likely to respond to this new capacity by making use of the improved facilities for all trips; not just intercity trips. For example, on roadways where capacity is added traffic congestion may well be eased, making a particular roadway more attractive a route for travel than it had been previously; this new traffic will not necessarily be only intercity traffic but rather shorter trips within a region. An analogous situation at airports would be where transcontinental or international flights make use of the capacity that was added to meet the intercity demand. In the case of both roadways and airports, it is entirely possible that as the forecasted intercity demand is realized it will compete for capacity with non-intercity traffic in the air and on the road. This phenomenon cannot be evaluated quantitatively at the scale of this analysis; suffice it to say that the assessment of the Modal Alternative is likely to give an optimistic picture of the consequences of adding capacity to roadways and airports in terms of congestion, and level of service. But for the purposes of this analysis, the added system capacity would be a benefit to the transportation system, even if the benefit is "consumed" and not fully evident in the measures of congestion and level of service.

1.1.3. High-Speed Train Alternative

The Authority has defined a statewide high-speed train system capable of speeds in excess of 200 miles per hour (MPH) (320 kilometers per hour [KM/H]) on dedicated, fully grade-separated tracks, with state-of-the-art safety, signaling, and automated train control systems. State of the art high-speed steel-wheel-on-steel-rail technology is being considered for the system that would serve the major metropolitan centers of California, extending from Sacramento and the San Francisco Bay Area, through the Central Valley, to Los Angeles and San Diego. Figure 4 shows the High-speed train Alternative for the Bay Area-to-Merced Corridor.

The High-Speed Train Alternative includes several corridor and station options. A steel-wheel on steel-rail, electrified train, primarily on exclusive right-of-way with small portions of the route on shared track with other rail is planned. Conventional "non-electric" improvements are also being considered along the existing LOSSAN rail corridor from Los Angeles to San Diego. The train track would be either at-grade, in an open trench or tunnel, or on an elevated guideway, depending on terrain and physical constraints.

For purposes of comparative analysis the HST corridors will be described from station-to-station within each region, except where a by-pass option is considered. In that case the point of departure from the corridor will define the end of the corridor segment.

The Bay Area-to-Merced corridor can be broadly divided into three regional segments. Each segment has several alternative alignments for all or a portion of the length of the segment. Each segment may be further subdivided for analyzing and reporting potential impacts. The various segment options, along with station locations, are described below.

Figure 4a
High Speed Rail Alternative – Bay Area-to-Merced Region

